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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	Docket:	1999DE304
Scherer et al.	)		
Application No. 09/914,478	)	Examiner:	Zucher, P. A.
Filed: 08/24/2001	)	Art Unit:	1621

Title: Method for producing (1,1":4,11") Terphenyl Compounds

DECLARATION UNDER 37 CFR 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Dr. Stefan Scherer, declare I am a citizen of Germany, residing in the city of Büttelborn;

I am a co-inventor of the above-named Application;

I have a PhD in Chemistry from the University of Frankfurt in Germany in 1995;

I was employed by Hoechst Aktiengesellschaft from 1996 to July 1997, and from July 1997 until the present I continued my employment with Clariant GmbH, as a research Chemist.

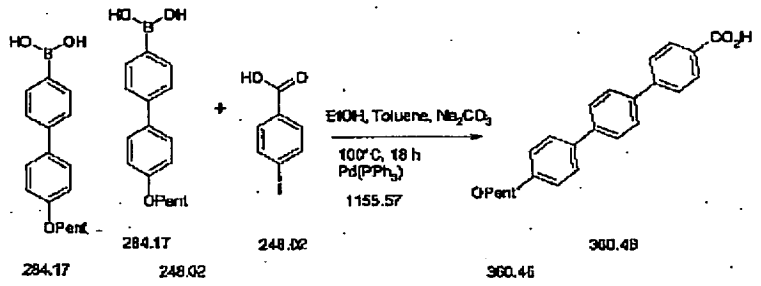
chemicals and aromatic organic chemicals and have been employed in this technology area since 1997. Since that time, and as part of my regular job duties, I have been responsible for the basic development of many organic chemical compounds and new synthesis for known organic compounds and aromatic organic compounds.

Applicant's invention is directed to an improved synthesis for terphenyl compounds. The main reference that the office bases its rejection on is the US equivalent of the WO 94/25050, which was discussed; extensively in our patent application.

Applicants have now run the now run the reaction in accordance with the Balkovec reference.

Procedure for 4''-(n-Pentyloxy)-[1,1':4',4''-terphenyl]-4-carboxylic acid (attempt)

acc. Lit.: J.M. Balkovic, M.L. Hammond, R.A. Zambias, USP 5,948,753 (1999)



10,0 g (35.2 mmol)	of the boronic acid and
1.909 g (7.70 mmol)	4-iodobenzoic acid are dissolved in a solution of
110 ml	ethanol and
300 ml	toluene. To this mixture are added
53 ml	2 M aqueous solution of sodium carbonate followed by
2.04 (1.77 mmol)	tetrakis(triphenylphosphin)palladium. The resulting mixture was

	heated to reflux (100°C) and stirred for 18 h at this temperature. After cooling to room temperature, the mixture was diluted with
100 ml	100 ml of water, acidified with
86 ml	2 M aqueous hydrochloric acid to pH = 2.3 and extracted with
100 ml	ethyl acetate. The organic layer was separated, washed with
100 ml	of water,
100 ml	brine and after filtration over celite dried with magnesium sulfate. Evaporation of solvents under reduced pressure yielded a brown solid which was analyzed by HPLC.

The results of the HPLC testing shows that, as was stated in the initial application, this process does not work for the intend production of 4''-(n-Pentyloxy)-[1,':4',4''-terphenyl]-4-carboxylic acid. You will see from the HPLC results appended to this declaration, that yield was significantly less than 1%.

The above comparative test proves that:

A. Balcovech employs a 5 fold excess of boronic acid and 20 mol % of the catalyst, which is not economical.

B. Only traces of the desired product are formed.

Further Applicants note that Iodobenzoic acid is a solid compound and not a liquid. Therefore it is very difficult to measure this compound in ml.

Unexpectedly, in view of the prior art, using the process of the present invention this compound can be prepared with good yields and high purity as set forth in the Application on page 15:

Preparation of 4"-n-pentoxy-[1,1':4',1"]-terphenyl-4-carboxylic acid from 4-n-pentoxyphenylboronic esters

Example 5

Preparation of 4"-n-pentoxy-[1,1':4',1"]-terphenyl-4-carboxylic acid

162 g of 4'-iodobiphenyl-4-carboxylic acid are introduced together with 129 g of glycol ester of 4-n-pentoxyphenyl boronic acid and 79.5 g of sodium carbonate into 1.5 l of ethylene glycol and, while stirring vigorously, 350 mg of PdCl2(PPh3)2 are added and the mixture is stirred at 80°C for 6 hours. The hot reaction mixture is cautiously poured into a mixture of 150 g of 37% strength sulfuric acid and 1 000 g of water, and the mixture is heated at 90-100°C for 30 minutes. After filtration and washing with water, the crude product is dried at 80°C/100 mbar and then recrystallized from dimethylacetamide. This affords after drying 141 g (78%) of 4"-n-pentoxy
[1,1':4',1"]-terphenyl-4-carboxylic acid with a purity of > 99%.

In light of Applicants comparative examples and the experimental data on Applicants process Applicants' respectfully request that the obvious rejection to USP 5,948,753 Balkovec, which was discussed throughout Applicants' Application in its European form, as WO 94/25050, be withdrawn and the claims allowed.

The under signed declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

19. Dez. 2003
Date

Dr. Stefan Scherer
Clariant GmbH

Attachment: HPLC results from (2 pages)